

From: Joy, Joe (ECY)
Sent: Monday, February 23, 2009 8:46 AM
To: Ragsdale, Dave (ECY)
Subject: FW: NPS Study, Study update for meeting on Feb 19

One small step for science...

From: Snouwaert, Elaine (ECY)
Sent: Monday, February 23, 2009 8:29 AM
To: Joy, Joe (ECY)
Subject: FW: NPS Study, Study update for meeting on Feb 19

FYI... sounds like they heard you. Unfortunately I didn't make it to the meeting but I'm going to try to follow up with Ben to see how it went.

From: Bonne Beavers [mailto:bbeavers@cforjustice.org]
Sent: Thursday, February 19, 2009 5:09 PM
To: Brattebo, Ben; Arnold, Dale; bdyk@stevenspod.org; Brewer, Lloyd; Brian Crossley; Clift, Lauri; connolly@spokanetribe.com; dabailey@cdatribe-nsn.gov; ragsdale.dave@epa.gov; Moore, David (ECY); Dick Price; Knight, David T. (ECY ERO); dmartindale@phd1.idaho.gov; Don Martin, EPA; martin.don@epa.gov; Doug Krapas; dsmith@libertylakewa.gov; Ed.Tulloch@deq.idaho.gov; Ennes.Susan@epamail.epa.gov; Friedman, Malcom; Glen.Rothrock@deq.idaho.gov; gmantz@spokanevalley.org; Bellatty, James (ECY); kdpz@kcgov.us; Kris Holm; lee@libertylake.org; Lindsay, Robert; Lunney, Meghan; Mielke, Todd; Moss, David; mott@co.stevens.wa.us; mpetersen@landscouncil.org; Nelson, Hank; NKersten@spokanevalley.org; Rawls, Bruce; Rick Eichstaedt; Rick-Noll@sccd.org; Rickard, Bill; rstevens@cdatribe-nsn.gov; rtinkey@deq.idaho.gov; sffields@cdatribe-nsn.gov; SidF@cdaid.org; Snouwaert, Elaine (ECY); thomas.herron@deq.idaho.gov; twerner@postfallsidaho.org; Voermans, Nancy; walt-edelen@sccd.org; Jon E. Rudders; Kasch, Michael; Sarah Hubbard-Gray
Subject: RE: NPS Study, Study update for meeting on Feb 19

This email serves to reiterate our concern that conclusions about loading based on averaging mixed data will probably not produce a useful product. As you can see from the email below, Joe Joy's regression model showing Hangman Creek's P loading is based on DATA collected at the mouth of Hangman Creek. To ensure that we have confidence in the conclusions drawn from this study, the data used must be consistent with the work already being done by Ecology, both in the Spokane River and Hangman Creek TMDLs. Indeed, in his email, Mr. Joy cautions that "interpretations based on averages" may lead to "unfortunate assumptions."

In light of the discussion at the advisory committee meeting today and Mr. Joy's advice, we trust that the necessary changes will be made to the loading maps to produce products in which the advisory group has confidence.

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From: Joy, Joe (ECY)
Sent: Tuesday, February 17, 2009 9:48 AM
To: Moore, David (ECY)
Cc: 'Brattebo, Ben'; Snouwaert, Elaine (ECY); Ragsdale, Dave (ECY); Ross, James D. (ECY); Arnold, Gary (ECY)
Subject: RE: NPS Study, Study update for meeting on Feb 19

Hi Dave –

It's difficult to tell on the P loading map if the area at the confluence of the Spokane River and Hangman Creek is a cluster of sites or one site. I think it may be a cluster – an adjustment of the symbols may help to clarify that. As for Hangman Creek's TP load – it varies radically over the year, and from year to year. These are estimated TP loads (lbs/day) based on a multiple regression model of data collected at the mouth of Hangman Creek:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
1996	811	6546	989	693	183	33	14	7.8	7	14.5	218	1680	933
1997	7084	2867	2634	554	252	79	42	25	21	17.6	30	54	1138
1998	726	483	267	73	164	43	12	4.8	4.2	4.8	12	1006	233
1999	1304	2968	843	138	48	20	11	7.2	5.9	7.0	16	208	465
2000	266	2651	821	376	85	39	12	5.2	5.3	6.0	8	13	357
2001	22	84	260	97	74	8.3	4.2	1.29	0.6	1.5	7	228	66
2002	1056	1127	986	265	42	15	4.2	2.0	2.1	2.6	6	11	293
2003	267	698	600	90	37	7.9	1.6	0.86	1.4	0.78	2	13	143
2004	481	876	199	16.4	184	15	2.7	0.62	0.66	1.4	6	28	151
2005	156	23	134	40	95	8.6	2.0	0.21	0.17	0.67	6	244	59

Although Hangman Creek hydrology and watershed conditions are somewhat unique in the Spokane River Basin, I'd be very careful about interpretations based on averages shown in the draft maps. The data are probably not from the same year or time of year. Mixing and matching data may lead to some unfortunate assumptions.

Call or email if you have questions.

Joe

Joe Joy

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From: Brattebo, Ben [mailto:BBRATTEBO@spokanecounty.org]

Sent: Friday, February 13, 2009 1:13 PM

To: Arnold, Dale; Barri Dyk (bdyk@stevenspud.org); Bonne Beavers; Brattebo, Ben; Brewer, Lloyd; 'Brian Crossley'; Clift, Lauri; 'connolly@spokanetribe.com'; 'dabailey@cdatribe-nsn.gov'; Dave Ragsdale (ragsdale.dave@epa.gov); 'David Moore (dmoo461@ecy.wa.gov)'; 'Dick Price'; 'dkni461@ecy.wa.gov'; 'dmartindale@phd1.idaho.gov'; 'Don Martin, EPA'; Donald Martin (martin.don@epa.gov); Doug Krapas; 'dsmith@libertylakewa.gov'; 'Ed.Tulloch@deq.idaho.gov'; Ennes.Susan@epamail.epa.gov; 'Friedman, Malcom'; Glen.Rothrock@deq.idaho.gov; 'gmantz@spokanevalley.org'; Jim Bellatty (jbel461@ecy.wa.gov); 'kdpz@kcgov.us'; Kris Holm; 'lee@libertylake.org'; Lindsay, Robert; Lunney, Meghan; Mielke, Todd; Moss, David; 'mott@co.stevens.wa.us'; 'mpetersen@landscouncil.org'; 'Nelson, Hank'; 'Nkersten@spokanevalley.org'; Rawls, Bruce; Rick Eichstaedt; Rick Noll (Rick-Noll@sccd.org); Rickard, Bill; 'rstevens@cdatribe-nsn.gov'; 'rtinkey@deq.idaho.gov'; 'sffields@cdatribe-nsn.gov'; 'SidF@cdaid.org'; Snouwaert, Elaine (ECY); Tom Herron (thomas.herron@deq.idaho.gov); 'twerner@postfallsidaho.org'; Voermans, Nancy; 'walt-edelen@sccd.org'; Jon E. Rudders; Kasch, Michael; Sarah Hubbard-Gray

Subject: NPS Study, Study update for meeting on Feb 19

NPS Study Advisory Committee and interested parties:

This email provides a NPS study update and several draft figures for your review prior to the next committee meeting on Thursday February 19 at 1 pm.

1. We are finalizing the project database for use in the study. We are reviewing the database for missed data, potential errors, outliers, or duplicated entries. The draft figures attached were created from the database and may change following the review.

2. We have started data analysis. The database is being used for spatial analysis at a watershed and subwatershed scale.

3. From the initial analysis, we have develop several draft figures for your review. One purpose of these figures is to show the committee the types of analysis we can do with the new database. None of the figures are final. These figures will be discussed at the Feb 19 meeting.

The figures represent:

- The average total phosphorus concentration at each surface water sample point in watershed
- The count of total phosphorus samples at each surface water sample point in watershed
- A simple total phosphorus loading estimate at each surface water sample point in the watershed with TP concentration and flow data

4. At the meeting on February 19, we will discuss the attached figures and recommendations for additional analysis.

At this time we propose similar analysis for:

- Groundwater
- Ortho-phosphorus (soluble reactive phosphorus)

and comparisons with:

- Watershed land use
- Estimated septic tank locations

If you have other analysis ideas, please let me know or bring the ideas to the meeting.

Please let me know if you have any questions before the meeting.

I look forward to seeing you next week:

- Thursday, February 19, 2009
- 1 pm to 3 pm
- Spokane County Public Works Building, 1026 W Broadway Ave, Spokane WA 99260
- Conference Room 2B

Thank you,

Ben Brattebo
Water Resources Specialist
Spokane County Utilities
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